REMARKS

In the Office Action, the Examiner noted that there were several related cases. The Examiner also provisionally rejected claims 1-18 under the judicially created doctrine of obviousness-type double patenting. Claims 2-3, 8, 11-12, and 17 were also objected to for lacking antecedent basis. In addition, claims 8 and 17 were rejected under §112, ¶1, for having clear support in the specification. Finally, claims 1-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by USP 5,742,086 issued to Rostoker et al (Rostoker). In this Amendment, Applicants have amended claims 2, 3, 8, 11, 12, and 17. Accordingly, claims 1-18 will be pending after entry of this Amendment.

I. Objection Regarding Co-pending/Related US Applications

In response to the Examiner's inquiry regarding related applications, Applicants note that they have submitted an IDS on October 24, 2003 identifying and providing copies of all cases related to the current case and several other applications pertaining to related technology.

II. Provisional Double Patenting Rejection

In the Office Action, the Examiner provisionally rejected claims 1-18 under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully contend that the double patenting rejection is improper and that the subject claims are not obvious in view of those of the cited applications. As the rejection is only a provisional one, however, Applicants respectfully request that this rejection should be held in abeyance until one of the applications cited by the Examiner issues into a patent.

III. Objections to Claims 2-3, 8, 11-12, and 17

In the Office Action, the Examiner objected to claims 2-3, 8, 11-12, and 17 on various grounds. The grounds will be addressed individually and sequentially below.

Claims 2 and 11 were objected to because the Examiner found the phrase "the length" to be without antecedent basis. Applicants have amended claims 2 and 11 such that antecedent basis is provided.

Claims 3 and 12 were objected to because the Examiner found the term "necessary" unclear. Specifically, the Examiner stated that "it is not clear how 'necessary' is determined." Applicants have amended claims 3 and 12 to replace the phrase "necessary wirelength" with the phrase "a length of a route."

Claims 8 and 17 were objected to because the Examiner found the phrase "the router's potential diagonal wiring" to be without antecedent basis. Applicants have amended these claims such that antecedent basis is provided.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the objection to the claims 2-3, 8, 11-12, and 17.

IV. Rejection of the Claims Under 35 U.S.C. §112, ¶1

In the Office Action, the Examiner rejected claims 8 and 17 under §112, ¶1, for having clear support in the specification. Applicants respectfully traverse this rejection. Applicants respectfully submit that claims 8 and 17 on their own provide the §112, ¶1 support for their limitations, as these two claims were part of the filed application. Applicants respectfully submit that filed claims constitute their own description. Moreover, Applicants respectfully submit that the specification in various instances states:

> In some of these embodiments, the initial circuit-element positions are random. In other embodiments, a previous physical-design operation, such as the floor planning, partially or completely specifies the initial positions of these elements. Other embodiments use another placer to specify the initial positions of the circuit elements, and then use process ... to optimize the placement configuration for a wiring architecture that uses diagonal wiring.

See, e.g., page 17, line 19 to page 18, line 1; page 26, lines 4-10; page 31, line 21 to page 32, line 2; etc. This statement, on its own or in conjunction with claims 8 and 17, clearly shows that Applicants were in possession of the invention recited in claims 8 and 17. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §112, ¶1 rejection of claims 8 and 17.

V. Rejection of the Claims Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1-18 under 35 U.S.C. § 102(b) as being anticipated by Rostoker. Applicants respectfully traverse this rejection. Each of the claims 1-9 recites a method for computing placement costs for a placer that partitions a region of a circuit layout into a plurality of sub-regions. For a set of sub-regions, this method identifies a connection graph that connects the set of sub-regions, where the connection graph has at least one edge that is at least partially diagonal. This method then identifies a placement cost from an attribute of the connection graph.

Applicants respectfully submit that Rostoker does not disclose, teach, or even suggest a method that identifies a placement cost from an attribute of a connection graph, which connects a set of sub-regions and which has at least one edge that is at least partially diagonally. If the Examiner believes that Rostoker discloses such a method, Applicants respectfully request that the Examiner specifically identify the passage in Rostoker that discloses identifying a placement cost from an attribute of a connection graph, which connects a set of sub-regions and which has at least one edge that is at least partially diagonally. Given that Rostoker does not disclose, teach, or even suggest identifying a placement cost from an attribute of such a connection graph, Applicants respectfully submit that Rostoker neither anticipates nor renders invalid any of the claims 1-9.

Each of the claims 10-18 recites a computer readable medium that stores a computer program for computing placement costs for a placer that partitions a region of a circuit layout into a plurality of sub-regions. For a set of sub-regions, this program identifies a connection graph that connects the set of sub-regions, where the connection graph has at least one edge that is at least partially diagonal. This program then identifies a placement cost from an attribute of the connection graph.

Applicants respectfully submit that Rostoker does not disclose, teach, or even suggest a program that identifies a placement cost from an attribute of a connection graph, which connects a set of sub-regions and which has at least one edge that is at least partially diagonally. If the Examiner believes that Rostoker discloses such a program, Applicants respectfully request that the Examiner specifically identify the passage in Rostoker that discloses identifying a placement cost from an attribute of a connection graph, which connects a set of sub-regions and which has at least one edge that is at least partially diagonally. Given that Rostoker does not disclose, teach, or even suggest identifying a placement cost from an attribute of such a connection graph, Applicants respectfully submit that Rostoker neither anticipates nor renders invalid any of the claims 10-18.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §102 rejection of claims 1-18.

CONCLUSION

In view of the foregoing, it is submitted that the claims are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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